**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Atty. Docket: GNEDENKO=8

| | | |
|---|---|---|
| In re Application of: | ) | Conf. No.: 5627 |
| Valeri G. GNEDENKO et al | ) | Art Unit: 3662 |
| I.A. Filing Date: 12/6/2004<br>371(c) Date: 6.11/2007 | ) | Examiner: J. B. SOTOMAYOR |
| U.S. Appln. No.: 10/584,911 | ) | Washington, D.C. |
| For: MICROWAVE TRANSCEIVER UNIT FOR DETECTING... | ) | December 19, 2008 |

**COMMUNICATION IN LIEU OF REPLY**

Honorable Commissioner for Patents
U.S. Patent and Trademark Office
Randolph Building, Mail Stop Amendments
401 Dulany Street
Alexandria, VA 22314

Sir:

Applicants have recently noticed that the wrong claims were examined in the present application, and applicants acknowledge with appreciation the telephone conference with Examiner Sotomayor on December 15, 2008, at which time Examiner Sotomayor advised applicant to file a paper explaining the problem, and Examiner Sotomayor would take care of the matter.

Upon initial entry into the U.S. National Phase in the present application on June 29, 2006, applicants filed a "Courtesy Copy of the International Preliminary Report on Patentability with Annexes Containing Specification Pages 3-3a to be substituted for original specification page 3 and claims 1-27 to be substituted for original claims 1-37 for examination in this case." See paragraph 20 near the bottom of page 1 of applicants' "TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A

FILING UNDER 35 USC 371", copy attached, where the quoted text appears in bold letters.

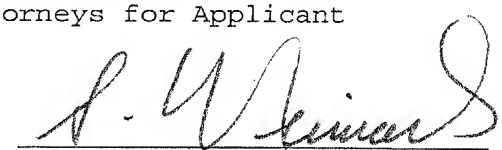
Also attached is a page containing in bold capital letters the following text "**COURTESY COPY OF THE INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY WITH ANNEXES CONTAINING SPECIFICATION PAGES 3-3A TO BE SUBSTITIUTED FOR ORIGINAL SPECIFICATION PAGE 3 AND CLAIMS 1-27 TO BE SUBSTITUTED FOR ORIGINAL CLAIMS 1-37 FOR EXAMINATION IN THIS CASE**" also filed on June 29, 2006.

Lastly, attached are the amended sheets containing claims 1-27 to be substituted for original claims 1-37, these pages showing at the top of the pages, numbers 35-42 and at the bottom of each page the indicia "AMENDED SHEET".

As the PCT substitute claims were properly in the application, and as applicants requested that these be the claims for examination, and as instead due to some mistake in the PTO the wrong claims 1-37 were examined, applicants hereby respectfully request a new action on the merits directed to substitute claims 1-27 filed during the International Phase.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.
Attorneys for Applicant

By 
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| U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | | ATTORNEY'S DOCKET NUMBER |
|---|---|---|
| **TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371** | | GNEDENKO8 |
| | | U.S. APPLICATION NO. (If known,see 37 CFR 1.5) Not Yet Assigned |
| INTERNATIONAL APPLICATION NO. PCT/IL2004/001106 | INTERNATIONAL FILING DATE December 6, 2004 | PRIORITY CLAIMED December 29, 2003 |

TITLE OF INVENTION
**MICROWAVE TRANSCEIVER UNIT FOR DETECTING THE LEVEL OF WASTE IN A FURNACE**

APPLICANT(S) FOR DO/EO/US
**Valeri G. GNEDENKO Et Al.**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. [X] This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. [ ] This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. [X] This is an express request to begin national examination procedures (35 U.S.C. 371(f) ) as soon as the application is in order for such purpose and the applicable requirements of 35 U.S.C. 371(c) have been complied with.
4. [X] The US has been elected (Art 31).
5. [X] A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. [ ] is attached hereto (required only if not transmitted by the International Bureau).
   b. [X] has been communicated by the International Bureau.
   c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US).
6. [ ] An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
   a. [ ] is attached hereto.
   b. [ ] has been previously submitted under 35 U.S.C. 154(d)(4).
7. [X] Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. [ ] are transmitted herewith (required only if not transmitted by the International Bureau).
   b. [ ] have been communicated by the International Bureau.
   c. [ ] have not been made; however, the time limit for making such amendments has NOT expired.
   d. [X] have not been made and will not be made.
8. [ ] An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. [ ] An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. [ ] An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

**Items 11. to 16. below concern document(s) or information included:**

11. [ ] An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. [ ] An Assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. [ ] A FIRST preliminary amendment.
14. [ ] An Application Data Sheet under 37 CFR 1.76.
15. [ ] A substitute specification.
16. [ ] A change of power of attorney and/or address letter.
17. [ ] A computer-readable sequence form of the sequence listing in accordance with PCT Rule 13*ter*.2 and 37 CFR 1.821-1.825.
18. [ ] A second copy of the published International Application under 35 U.S.C. 154(d)(4).
19. [ ] A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4)
20. [X] Other items or information:
    [X] Courtesy copy of the International Application as filed.
    [X] Courtesy copy of the first page of the International Publication (WO 2005/064290).
    [X] **Courtesy copy of the International Preliminary Report on Patentability with annexes containing specification pages 3-3a to be substituted for original specification page 3 and claims 1-27 to be substituted for original claims 1-37 for examination in this case.**
    [X] Formal drawings, 6 sheets, Figures1-6.
    [X] Courtesy Copy of the International Search Report.
    [X] The application is (or will be) assigned to: E.E.R. Environmental Energy Resources whose address is 12 Hachilazon Street, 52522, Ramat-Gan, Israel.

| U.S. APPLICATION NO. (If known,see 37 CFR 1.5) | International Application No. | Attorney's Docket No |
|---|---|---|
| Not Yet Assigned | PCT/IL2004/001106 | GNEDENKO8 |

21. The following fees are submitted:

| | CALCULATIONS PTO USE ONLY | |
|---|---|---|
| [xx] a) **BASIC NATIONAL FEE (37 CFR 1.492(a))**.....**$300.00** | | |
| [ ] b) **SEARCH FEE (37 CFR 1.492(b))** | | |
| [ ] US was International Searching Authority.....**$100.00** | | |
| [ ] Other ISR provided to USPTO.....**$400.00** | | |
| [ ] All other situations.....**$500.00** | $300.00 | |
| [ ] c) **EXAMINATION FEE (37 CFR 1.492 (c))** | | |
| [ ] IPEA/US gave wholly favorable IPER.....**$100.00** | | |
| [ ] All other situations.....**$200.00** | | |
| TOTAL OF ABOVE CALCULATIONS : | | |
| Surcharge of **$130.00** for furnishing the oath or declaration later than [ ]20 [ ]30 months from the earliest claimed priority date (37 CFR 1.492(h)). | $ | |

| TOTAL SHEETS | EXTRA SHEETS | Number of each additional 50 or fraction thereof (round up to a whole number) | RATE (1.492(g)) | | |
|---|---|---|---|---|---|
| 52 - 100 | /50 | | X **$250.00** | | |

| CLAIMS | Number Filed | Number Extra | Rate (1.492 (d-f)) | | |
|---|---|---|---|---|---|
| Total Claims | - 20 = | | X $ **50.00** | $ | |
| Independent Claims | - 3 = | | X **$200.00** | $ | |
| Multiple Dependent Claims (if applicable) | | | + **$360.00** | $ | |
| | | | **TOTAL OF ABOVE CALCULATIONS =** | $300.00 | |
| Reduction of ½ for filing by small entity, if applicable. Applicant claims small entity status. See 37 CFR 1.27. | | | | $ | |
| | | | **SUBTOTAL =** | $300.00 | |
| Processing fee of **$130.00** for furnishing the English translation later than [ ]20 [ ]30 months from the earliest claimed priority date (37 CFR 1.492(i)). | | | | $ | |
| | | | **TOTAL NATIONAL FEE =** | $300.00 | |
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property + | | | | $ | |
| | | | **TOTAL FEES ENCLOSED =** | $300.00 | |
| | | | | **Amount to be: refunded** | $ |
| | | | | **charged** | $ |

**Payment Method (check one only)**

a. [ ] A check in the amount of $_____ to cover the above fees is enclosed.

b. [X] Credit Card Payment Form (PTO-2038), authorizing payment in the amount of $300.00, is attached.

c. [ ] Please charge my Deposit Account No. **02-4035** in the amount of $_____ to cover the above fees. A duplicate copy of this sheet is enclosed.

**Handling of Fee Deficiencies (check one only)**

[ ] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **02-4035**. A duplicate copy of this sheet is enclosed.

[X] If a deficiency exists in the basic national fee set by 37 CFR 1.492(a), please charge it to Deposit Account **02-4035**. At this time, no authorization is given to charge any other fees.

**NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.**

Direct all correspondence to the address associated with **CUSTOMER NUMBER 001444**, which is currently:

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**WASHINGTON, D.C. 20001**
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Date of this submission: **June 29, 2006**

SIGNATURE

Roger L. Browdy

NAME

25,618

REGISTRATION NUMBER

RLB:th

COURTESY COPY OF THE INTERNATIONAL

PRELIMINARY REPORT ON

PATENTABILITY

WITH ANNEXES CONTAINING

SPECIFICATION PAGES 3-3A TO BE

SUBSTITUTED FOR ORIGINAL

SPECIFICATION PAGE 3 AND CLAIMS 1-

27 TO BE SUBSTITUTED

FOR ORIGINAL CLAIMS 1-37

FOR EXAMINATION IN THIS CASE

**Claims: -**

1. A microwave transceiver unit for detecting the level of waste in a feeding conduit that extends into the vertical chamber of a shaft furnace said microwave transceiver unit comprising:-

an elongate body having a configuration adapted for inserting through and reversibly mounting in an aperture provided in the wall of said vertical chamber,

said elongate body comprising microwave transmission/receiving means associated with its first end and operatively connectable to either microwave generating means or microwave detection means;

characterized in that said microwave transceiver unit comprises:

— a metallic wave conductor coupled at its first end to said transmission/receiving means and the second end of said conductor being operatively connectable to either said microwave generating means or said microwave detection means;

— an insulation layer substantially surrounding at least said conductor; and

— an outer metallic layer substantially surrounding said insulation layer.

2. A microwave transceiver unit as claimed in claim 1, wherein the microwave transmission/receiving means comprises an antenna operatively connected to the wave conductor.

3. A microwave transceiver unit as claimed in claim 2, wherein the antenna is substantially frusto-conical having the larger end thereof as a transmitting/receiving face.

4. A microwave transceiver unit as claimed in claim 2, wherein the wave conductor and the antenna are integrally joined.

5. microwave transceiver unit as claimed in claim 2, wherein the wave conductor and the antenna are made from any suitable metal including any one of stainless steel, copper and brass or alloys thereof.

6. A microwave transceiver unit as claimed in claim 3, comprising a screen means covering the transmission/receiving face of the antenna, said screen means being substantially transparent to microwave electromagnetic radiation.

7. A microwave transceiver unit as claimed in claim 6, wherein the screen means are made from any suitable dielectric material.

mutually facing flanges for sealing the sleeve member with respect to the body.

14. A method for monitoring the level of waste in a feeding conduit that extends into the vertical chamber of a shaft furnace, comprising:

(a) Providing one or more pairs of microwave transceiver units according to claim 1, wherein:

- the elongate body of each microwave transceiver unit is inserted through and reversibly mounted in an aperture provided in the wall of said vertical chamber;
- said elongate body has an axial dimension such that the first end of said body extends into said vertical chamber from said aperture at least into proximity with, but not in contact with a first screen transparent to microwave radiation, which is mounted over a suitable portal provided in the wall of said feeding conduit;
- during operation of said microwave transceiver unit, at least a portion of said first screen is in aligned relationship with the microwave transmission/receiving means of each of said microwave transceiver units and wherein said first screen is sufficiently large to maintain an aligned relationship between at least a portion of said first screen with respect to said

microwave transmission/receiving means for a range of displacements of said first screen with respect to said microwave transmission/receiving means; and

- the second microwave transmission/receiving means of each of said pairs is positioned substantially diametrically opposed to the first transmission/receiving means of the pair;

(b) transmitting suitable microwave radiation via one of said first or second microwave transmission/receiving means and receiving a received radiation with the other one of said first or second microwave transmission/receiving means; and

(c) comparing the intensity of the received radiation with the transmitted radiation to determine the level of waste in said feeding conduit by relating said comparison of intensities to a threshold value.

15. A method for monitoring waste as claimed in claim 14, comprising more than one pair of microwave transceiver units, wherein each of said pairs is located at a different height along the depth of the conduit.

16. A method for monitoring waste as claimed in claim 14, comprising more than one pair of microwave transceiver units, wherein each of said pairs is located at a different angular disposition with respect to a longitudinal axis of the conduit.

17. A method for monitoring waste as claimed in claim 16, wherein adjacent pairs are arranged in orthogonal relationship with respect to a longitudinal axis of the conduit.

18. A method as claimed in claim 14, wherein the range of displacements is correlated to the thermal expansion of the wall of the feeding conduit with respect to the wall of the vertical chamber.

19. A method as claimed in claim 14, wherein the body is distanced from the first screen means sufficiently to permit displacement of said first screen means with respect to the microwave transmission/receiving means.

20. A method as claimed in claim 14, wherein the body comprises displacement means in abutting contact with one of the wall of the feeding conduit and the first screen means to permit displacement of said first screen means with respect to the microwave transmission/receiving means.

21. A method as claimed in claim 20, wherein the displacement means comprises at least one wheel mounted for rotation with respect to the body, wherein said wheel is in rotatable contact with at least one of the wall of the feeding conduit and the first screen means.

22. A method as claimed in claim 21, comprising at least one suitable rail on at least one of the wall of the feeding conduit and the first screen means corresponding to the at least one wheel, wherein during operation of the transceiver unit, said at least one wheel is in rotatable contact with a corresponding said rail.

23. The method of claim 14, wherein only a first pair of microwave transceiver units is provided and when the intensity of the received radiation is below a predetermined threshold value it is determined that the level of waste is substantially below the level of said first pair.

24. The method of 14, wherein only a first pair of microwave transceiver units is provided and when the intensity of the received radiation is at or above a predetermined threshold value it is determined that the level of waste is substantially at or above the level of said first pair.

25. The method of claim 14, wherein a second pair of microwave transceiver units is provided at a location longitudinally displaced from the first pair of microwave transceiver units, and wherein a waste flow rate in the furnace is determined by determining the

time interval between the point at which it is determined that one of said pairs of microwave transceiver units is no longer detecting waste and the point at which the other pair of said microwave transceiver units is no longer detecting waste thereat.

26. The method of claim 14, wherein the threshold value may be controlled as desired.

27. The method of claim 26, wherein the threshold value is adjusted according to the general composition of the waste being introduced into the furnace.